

IN THE CLAIMS

Claims 1-15 (Canceled)

16. (Currently Amended) A method for managing data, comprising:

selecting a first FIFO memory from a plurality of first-in-first-out (FIFO) memories to output first data stored in a first storage element in the first FIFO memory in response to a first read address from a data reading device, wherein the first data was prepared for output prior to a generation of the first read address from the data reading device; and

preparing next data from a next storage element from the first FIFO memory for output by transmitting a read address of the next storage element to the first FIFO memory prior to a request for the next data from the data reading device.

17. (Canceled)

18. (Original) The method of Claim 16, wherein the first data is output within a clock cycle after the first read address from the data reading device is generated.

19. (Canceled)

20. (Original) The method of Claim 16, further comprising:

selecting a second FIFO memory from the plurality of FIFO memories to output second data stored in a first storage element in the second FIFO memory in response to a second read address from the data reading device; and

preparing next data from a next storage element from the second FIFO memory for output.

21. (Original) The method of Claim 20, wherein the selecting the second FIFO memory is performed during the preparing of the next data from the next storage element from the first FIFO memory for output.

22. (Original) The method of Claim 16, further comprising writing data into the plurality of FIFO memories in a round robin fashion.

23. (Currently Amended) A method for managing data, comprising:

selecting a first FIFO memory from a plurality of first-in-first-out (FIFO) memories to output first data stored in a first storage element in the first FIFO memory in response to a first read address from a data reading device, wherein the first data is output within a clock cycle after the first read address is generated; and

preparing next data from a next storage element from the first FIFO memory for output by transmitting a read address of the next storage element to the first FIFO memory prior to a request for the next data from the data reading device.

24. (Original) The method of Claim 23, wherein the first data was prepared for output by the first FIFO memory prior to a generation of the read address from the data reading device.

25. (Canceled)

26. (Original) The method of Claim 23, further comprising:

selecting a second FIFO memory from the plurality of FIFO memories to output second data stored in a first storage element in the second FIFO memory in response to a second read address from the data reading device; and

preparing next data from a next storage element from the second FIFO memory for output.

27. (Original) The method of Claim 26, wherein the selecting the second FIFO memory is performed during the preparing of the next data from the next storage element from the first FIFO memory for output.

Claims 28-32 (Canceled)

33. (Currently Amended) A method for managing data, comprising:

selecting a first FIFO memory from a plurality of first-in-first-out (FIFO) memories to output first data stored in a first storage element in the first FIFO memory in response to a first read address from a data reading device;

preparing next data from a next storage element from the first FIFO memory for output;

selecting a second FIFO memory from the plurality of FIFO memories to output second data stored in a first storage element in the second FIFO memory in response to a second read address from the data reading device; and

preparing next data from a next storage element from the second FIFO memory for output by transmitting a read address of the next storage element to the first FIFO memory prior to a request for the next data from the data reading device.

34. (Original) The method of Claim 33, wherein the first data was prepared for output by the first FIFO memory prior to a generation of the read address from the data reading device.

35. (Original) The method of Claim 33, wherein the first data is output within a clock cycle after the first read address from the data reading device is generated.

36. (Canceled)

37. (Original) The method of Claim 33, wherein the selecting the second FIFO memory is performed during the preparing of the next data from the next storage element from the first FIFO memory for output.

38. (New) A data buffering unit, comprising:
a memory that includes a plurality of first-in-first-out (FIFO) memories to store data;
a memory read manager to select a first FIFO memory to output first data stored in a first storage element in the first FIFO memory in response to a first read address from a data reading device, wherein the first data was prepared for output prior to a generation of the first read address, and to prepare next data from a next storage element from the first FIFO memory for output by transmitting a read address to the first FIFO memory prior to a request for the next data from the data reading device.

39. (New) The data buffering unit of Claim 38, wherein the memory read manager comprises a memory enable unit that asserts a read enable line to each of the plurality of FIFO memories.

40. (New) The data buffering unit of Claim 38, wherein the memory read manager comprises a read address manager that determines which of the plurality of FIFO memories to access in response to a read address from the data reading device.

41. (New) The data buffering unit of Claim 38, wherein the memory read manager comprises a read selector, coupled to data outputs of each of the FIFO memories, to select an appropriate data output to receive data from in response to a read address from the data reading device.

42. (New) The data buffering unit of Claim 38, wherein the memory read manager comprises a plurality of read pointer managers, each corresponding to one of the FIFO memories, the read pointer managers transmit an appropriate read address to each of the FIFO memories to prepare data to be prepared for output on the FIFO memories prior to receiving a request for the data from the data reading device.

43. (New) The data buffering unit of Claim 38, further comprising a memory write manager that directs data from the data transmitting device to be written into each of the FIFO memories in a round robin fashion.

44. (New) The data buffering unit of Claim 43, wherein the memory write manager comprises a write address manager that determines which of the FIFO memories to access in response to a write address received from the data transmitting device.

45. (New) The data buffering unit of Claim 44, wherein the write address manager determines a write address in one of the FIFO memories to write data in response to the write address received from the data transmitting device.

46. (New) The data buffering unit of Claim 43, wherein the memory write manager comprises a write selector that transmits a write enable signal and data from the data transmitting device to an appropriate FIFO memory in response to the work address manager.

47. (New) A programmable logic device (PLD), comprising,
memory blocks that form comprises a plurality of first-in-first-out (FIFO) memories to store data from a data transmitting device; and
logic elements to form a memory read manager to select a first FIFO memory to output first data stored in a first storage element in the first FIFO memory in response to a first read address from a data reading device, wherein the first data was prepared for output prior to a generation of the first read address from the data reading device, and to prepare next data from a

next storage element from the first FIFO memory for output by transmitting a read address to the first FIFO memory prior to a request for the next data from the data reading device.

48. (New) The PLD of Claim 47, wherein the memory read manager comprises a memory enable unit that asserts a read enable line to each of the plurality of FIFO memories.

49. (New) The PLD of Claim 47, wherein the memory read manager comprises a read address manager to determine which of the plurality of FIFO memories to access in response to a read address from the data reading device.

50. (New) The PLD of Claim 47, wherein the memory read manager comprises a read selector, coupled to data outputs of each of the FIFO memories, to select an appropriate data output to receive data from in response to a read address from the data reading device.

51. (New) The PLD of Claim 47, wherein the memory read manager comprises a plurality of read pointer managers, each corresponding to one of the FIFO memories, the read pointer managers transmit an appropriate read address to each of the FIFO memories to prepare data to be prepared for output on the FIFO memories prior to receiving a request for the data from the data reading device.